The MAC Flyer

JANUARY 1974

The MAC Flyer

MILITARY AIRLIFT COMMAND
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THE STAFF
MAJ JOHN W. RAY Supervising Editor
MAJ GEORGE D. BURGESS Associate Editor
CAPT ALBERT R. BARBIN, JR. Associate Editor
MARILYN A. BOLIEAU Managing Editor
TSGT EUGENE REECE Art Director

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in MAC Air Operations

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COVER: On top of the world – a pilot's view. An original painting by Maj Charles L. Pocock, Weapons System Safety Manager, Scott AFB, Ill.

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Squawk Box

What better time could there be to hang a rap on you crew members than the beginning of a brand new year. And here it is. You helped win an award for THE MAC FLYER.

Stories and letters written by you and published in THE MAC FLYER were instrumental in the magazine's being awarded the Flight Safety Foundation Publications Award.

The presentation was at the International Air Safety Seminar at Lisbon, Portugal, and representatives from virtually every major airline in the world were present. Many of the airlines receive THE MAC FLYER and have a pretty good knowledge of what is happening in MAC.

The point is, you men out there on the line are the source of the most original articles that we publish. You're the backbone of MAC and we thank you for helping make this a top safety magazine.

* * *

But it's 1974, now, and time to get started again on the annual Flying Safety Writing Contest. Last year, those who participated in it produced some of the most outstanding articles ever to appear in this publication.

So, without belaboring a point, why don't you MAC men spin us a yarn on some of your real or imagined experiences (actually, you don't have to be in MAC to enter). Don't hold back. You can do it. Remember, the contest is a vital means of communication between all who operate in and around our flying environment.

Furthermore, the contest offers you that magic opportunity to "publish" something of your own.

A new man is on the scene.
Appropriately, he's called the...

Supervisor of Flying

by Maj George D. Burgess, Associate Editor

Don't be surprised the next time you're out in the system if you're greeted after engine shutdown by this fellow who seems to be everywhere at once.

It's probably the Supervisor of Flying (SOF). He's a relatively new gentleman in MAC; if you haven't already met him, you will.

The SOF program is shifting into high gear and that means you'll be seeing him on the line more frequently, supervising all aspects of the flying operation so that none of your minor problems snowball into large ones.

Sounds like the old Aerodrome Officer of the recent past? There is a resemblance, but the SOF's duties go much further.

A SOF Save

For instance, in SAC recently, the SOF was performing the "last chance" visual inspection on a departing FB-111 when he found a lock nut on the taxiway near the runway. Maintenance personnel identified the object as a landing gear stabilizer bar lock nut. Since the SOF had no way of knowing which aircraft it had come from, he directed each aircraft in the area to make low approaches. As they did so, personnel visually checked each aircraft. But they could find no damage. The SOF then directed all aircraft under his control to make precautionary landings and engage the approach end barrier.

After each landing, a close inspection was made. Finally, the aircraft with the missing nut was located.

This was a case of materiel failure of a critical item which the aircrew had no means of detecting. But the SOF caught the discrepancy through conscientious application of his normal duties. He might have prevented an air-

SUPERVISOR OF FLYING —continued

craft accident — which is one of his primary duties.

Although other major commands have utilized the SOF concept successfully for some time, MAC's SOF is by no means a carbon copy of these. MAC's Supervisor of Flying has been tailored specifically to the Command's unduplicated mission.

SOF makes last chance inspection.

You might wonder why MAC suddenly needs yet another supervisor.

As a matter of fact, the SOF in some instances is taking over many former command post duties at overseas bases, and he's working out of the MAC operations office. Stateside, he augments the command post as a coordinator between crews and such functions as maintenance, traffic, and weather.

But his most vital duty is to serve as an extra set of eyes for both the commander and the aircrews, particularly during departure and arrival phases of each mission.

What Is He?

He's part supervisor, part duty officer, a coordinator par excellence, and virtually a full-time safety officer. He'll share his experience and knowledge at any time, offer assistance, and keep a watchful eye for hazards, whether the crews are on the ramp or in the dark sky combating an in-flight emergency.

That brings up another reason for the SOF's entrance into MAC. The day when MAC's aircraft commander's possessed an average of 5,000 hours flying time is past. Today's pilot experience level is the lowest ever. For example, the typical MAC aircraft commander has flown less than 1,700 hours! If that doesn't sound like inexperience, just remember that only a few years ago pilots with less than 2,000 hours weren't even eligible for upgrade to aircraft commander.

Today's young crews are no doubt better trained than their predecessors. But, whereas the crews of the 1950's and 1960's accumulated years of experience prior to upgrade, today's crews simply don't have that reservoir from which to draw. Yet, even the experienced crews of years past would have benefited from a man like the SOF. Just ask any MAC aircraft commander who shuttled into Southeast Asia bases around 1965.

Where He's Needed Most

Stateside, on MAC bases, there won't be a great deal of difference in command post service. So — the SOF's duties are primarily those of a safety monitor. The SOF's presence will be felt greatest overseas where MAC and non-MAC command posts are being consolidated. No longer will crews have to drop by the command post before and after a mission.

The SOF will handle the arrival and departure checklist, just as the command post duty officer did in the past. Crews will still have airborne communications as a link with the command post. On the ground you might need to talk with command post personnel by phone occasionally. And it is the command post that will alert crews; but, it is the SOF who will meet you face-to-face, not a duty controller.

What else can you expect from the overseas SOF? He'll see that you get your mission folder, flight plan, authentication tables, SIDs, and Notams. He'll check your orders and provide the predeparture and required intelligence briefings. It's the SOF who will ensure that local flight pubs are up-to-date. If the weather deteriorates, he'll divert you to a safer haven. When he observes an unsafe ground operation, he'll correct it on the spot. You can see that it usually isn't necessary to ask for the SOF's services; he'll take many actions for you on his own. Before long, you'll be looking upon him as your right-hand man on the ground.

Conference Skyhook

The SOF not only assures these routine tasks are taken care of, but he provides another, even more valuable, service for aircrews — Conference Skyhook. The SOF is usually equipped with a UHF radio for communication with aircraft and an FM radio for command post contact. At an aircraft commander's request, or on his own initiative, the SOF can usually plug into the communications network for consultation with experts just about anywhere.

Coordinating prelaunch actions.

This network allows a crew to contact headquarters up the line, including MAC Headquarters. Should you desire highly technical data, the manufacturer's tech rep can be brought onto the line. You talk only to the SOF and he confers with the experts. The command post, of course, can initiate the Conference Skyhook. In this event, the SOF will move into the command post.

Is He Qualified?

These are some of the things the SOF can do for you. But, what about his qualifications? SOF, is usually an operations officer, or a highly qualified aircraft commander. As overseas command posts are consolidated, former command post duty controllers will likely comprise most of the SOF force. Remember, the SOF is only utilized on bases where MAC aircraft regularly transit or where ALCE operations require his presence. At other locations, the aircraft commander becomes his own SOF which requires extra care and thorough planning.

The next trip you're on, take a look around and you'll see this new supervisor on the line. He's there to assist you and your crew in having a safer flight. His vehicle is marked with his title, "Supervisor of Flying." And that's just what he is.

MAC Flying Safety Writing Contest:

You still have time.

Got something to say about flying and looking for a way to let everybody hear it? Look no farther. You have found your sounding board right here in THE MAC FLYER.

The MAC Flying Safety Writing Contest is underway right now, so get your ideas together, burn a few kilowatts, and get started now on that draft that could win you a measure of fame in the world of aviation.

Some of the most widely acclaimed articles appearing in this magazine came from the pen of MAC men just like you. If you can't type, sublet the typing to your bride, secretary, or latest honey. Otherwise, cozy up to your typewriter and get going.

Here's a tip. Stories about line missions, inflight emergencies, the POW airlift, and the long hauls into Israel are only a few of the excellent sources you can draw upon.

Last year's winner, "The Model Man," was authored by a member of the Air National Guard. A navigator wrote "The Magic Word," the second place winner.

THE MAC FLYER is received by many of the world's major airlines and the magazine itself is read by thousands throughout the world of aviation.

You have as good a chance as anyone to win and have your entry published in the magazine along with your byline, so don't hold back simply because you never had an article published before.

The contest ends 31 March 1974. The first three winners will receive engraved walnut desk sets. Honorable mention winners will be awarded impressive pen and pencil sets.

So who can enter? All aircrew members, as well as maintenance and support personnel. While only military personnel and DAF civilians, assigned to MAC or MAC reserve forces, are eligible for awards, anyone may submit an entry which, if selected, will be published.

Entries must be original, unpublished, and have a flying safety message. Please keep entry between 1,000 and 3,000 words. That's about six to 14 typewritten pages, double spaced.

Act now!

The crew saw the "Big Picture" that day, and learned who "They" were. It was assistance from this nebulous group that solved the...

Airborne Emergency

by Maj Douglas W. Potts,
21st Air Force, Aircrew
Standardization

Harry, the young Captain IP, responded to his two new student copilots' questions. "Don't be ridiculous, we fly the heavies, man! We've got backup systems out the ying yang. We've got professionals; and, as long as they do their jobs, which they always do, serious airborne emergencies do not occur. All you've got to do is follow the checklist and concentrate on flying this bird, which isn't all that difficult. The C-141 has a beautiful flight director system that does most of the work for you. Finish your coffee, and we'll get this show on the road."

As the three young pilots arrived at the aircraft, they could see the sun just breaking through the low layered stratus, giving promise of a beautiful day. The flight engineers had just completed their preflight and pronounced the bird ready. Preacher, the primary engineer with over 12,000 hours flying experience, announced to the crew that today was a day he'd remember. He had just experienced a "first."

"You may not believe this, but I just met the 'Regular Crew Chief' and now if I can just see the 'Big Picture' and find out who 'They' are, I can retire a happy man."

Bill, the brown bar, turned to his worldly flying companion, noted the small balls of string covering his much washed NOMEX flying suit, and asked, "Joe, I think I know what he means by the 'Big Picture' and the 'Regular Crew Chief,' but who're 'They'?"

"Oh, you know," replied Joe, "They're the ones you never see, who put out all the reams of paper telling you what you can do and can't do, how to do this and that. The Air Force has more people than it needs, so these selected ones have the plush jobs and justify their positions by telling the work-

AIRBORNE EMERGENCY —continued

ing troops — the guys that spend all their time flying airplanes — how to fly them."

Harry broke in. "Okay Joe, since you're fresh out of TTU and should be an expert on the aircraft systems, you'll be in the left seat for the first two hours. I'll be in the right seat, and Bill, since you just got your wings, you can watch from the jump seat." Harry continued his briefing, outlining the duties and responsibilities of both pilots and explaining in detail what he expected each pilot to accomplish during the four hour local.

All predeparture procedures were normal, and Joe's lift-off belied his experience. The lift-off was just the beginning. Joe had never flown any aircraft as well as he could this one. He was feeling exuberant — if he could just execute this ADF approach and maybe get a grease job, he'd have it made.

The IP brought Joe out of his euphoria. "I think you should configure."

"They" helped prevent this.

"Yes Sir, I'm 200 knots now, gear down."

Harry put the gear handle down and waited for the locked indication. To his surprise, the nose gear did not indicate the expected "Down and locked" condition. "What do you know?" asked Harry. All he received was a questioning look. "Okay, scanner, go down and take a look at the nose gear; it indicates an unsafe condition."

Harry continued, "Joe, always have someone visually check an unsafe indication if possible. In most cases, it's the indicator itself, or the microswitch sticking, that causes the unsafe indication."

"Pilot," said the slightly wavering voice of Snuffy, the scanner, "we've got a problem. The nose gear is about 80 percent extended, and the drag link trunnion is cocked at a funny angle. Standby and let me check it from the other side."

Harry executed a missed approach and advised the tower and the SOF that he was experiencing gear problems. He set up a holding pattern to trouble shoot the gear system. A few minutes later, the scanner appeared on the flight deck. Harry gave the aircraft to Joe and turned to the scanner and the engineer.

He said to Preacher, at the panel, "Well, Sarge, what do you think?"

Snuffy answered for Preacher, "Sir, the drag link trunnion is definitely cocked. I'm pretty sure one side is broken. I could see it real well from the right side, and it's pushed back several inches."

Snuffy and Harry both looked at the engineer, who was calmly packing his pipe with a new blend of Spanish tobacco purchased on his last trip to Madrid. "Captain," he said as he swiveled his seat around, "I don't think we can fix it. And, with one side broken, it will probably collapse on touchdown. I'll go down and double check, but I'm sure Snuffy's diagnosis is correct."

Harry began to get concerned. He put Joe in the right seat and climbed into the left seat himself. He then called the SOF, who was now in the command post, and explained the particulars of his problem. The SOF replied, "Continue holding. We are advising higher headquarters of your problem through Conference Skyhook and want you to wait until we hear what they say."

"What they say! Who's responsible for flying this aircraft anyway?" Harry asked no one in particular. "They aren't sitting up here with a broken nose gear."

Preacher returned to the flight engineer's position and informed Harry that everything Snuffy had said was, indeed, true. The pin holding the drag link trunnion was broken.

Harry made several contacts with the command post during the next 30 minutes and always received the same answer, "Continue holding. They haven't decided what to do yet." The crew continued to discuss the problem and study the tech orders.

After a while, the flight deck grew quiet. Each crew member was thinking about the approaching landing. A possible — Fire! What would be the quickest method of evacuating the aircraft? Their thoughts were broken by the radio, "MAC 50276, this is the Command Post; over."

"Command Post, this is 276; go ahead."

"Just received a call from 21st; they say the main gear pin will fit in the broken trunnion. Have your engineers push the nose gear forward with a pry bar and insert the main gear pin through the hole and into the drag link trunnion. This will hold the gear in place and give you a safe indication. Let us know how it works."

"Yes Sir," said Harry. "Preacher, we'll watch the panel, you and Snuffy give it a try."

Preacher and Snuffy both went downstairs, found a pry bar and a main gear pin, and went to work. Approximately ten minutes later, Joe cried, "It's safe; the nose gear indicates safe!"

Harry shook his head, "Well, son-of-a-gun. Guess they knew what they were talking about. Okay guys, let's get this bird on the ground."

* * *

How did "They" know? Well, the SOF established the Conference Skyhook with the 21st Command Post. The 21st duty officer decided this particular problem needed the expertise of his engineers and referred the problem to them. Within ten minutes, the engineers decided they did not have the practical experience to deal with a broken drag link trunnion. They called the local wing and asked maintenance to put an aircraft on jacks for nose gear testing. This was done immediately, and the aircraft was ready by the time the engineers arrived. One side of the drag link trunnion was disconnected and they began to experiment. They found the fix in short order and relayed the information to the aircraft through the SOF. The result — a fix was found and a possible aircraft accident was avoided.

* * *

"You know," said Preacher, as the crew was leaving the Command Post, "today has been a most rewarding day. I've met the 'Regular Crew Chief,' finally seen one aspect of the 'Big Picture,' and most important, I discovered how important 'They' are."

Bill and Joe looked at each other. They had learned more today than just techniques on flying the Starlifter. They knew they too had started to see the "Big Picture."

The Big Picture in focus — a safe recovery.

Capt Kosko and Crew

GOOD SHOW

Pictured: Standing, left to right: Maj Fredrick F. Paul, navigator; Capt Kosko; Maj Ludwig A. Soder, pilot; kneeling, left to right: TSgt James D. Keenum, flight engineer; MSgt Howard F. Mix, flight engineer.

Not Pictured: Col James L. Jones, pilot; MSgt Francis J. Gogan, flight engineer.

Capt Richard J. Kosco and his C-5 crew, 443 MAW, Altus AFB, OK, experienced a serious inflight emergency on 27 September 1973. The gear handle was lowered during a training mission but the nose gear failed to indicate down and locked. The crew verified that the nose gear doors were fully open and the gear extended partially beyond the doors.

They began trouble-shooting the complicated nose gear system but failed to find a way to fully extend it. Capt Kosco initiated the Conference Skyhook and received further guidance from the experts on the ground. Finally, when all possible solutions were exhausted, a decision was made to land with the nose gear partially extended.

It took five crew members an hour to reposition the 10,000 pound ballast to the rear of the aircraft for a more favorable landing CG.

After the runway was foamed, Capt Kosco initiated his approach. He touched down approximately 1,500 feet down the runway and made smooth nose gear contact in another 2,500 feet. Applying reverse thrust slightly beyond reverse idle, Capt Kosco encountered no directional problems and stopped the aircraft at the 5,500 foot mark. The nose gear maintained its intermediate position during landing and no damage was incurred. Failure of the nose gear to fully extend was caused by a seized right angle gear box.

The actions by this professional crew averted a possible serious aircraft accident. THE MAC FLYER takes pride in joining the rest of the Military Airlift Command in saying, Good Show!

With one eye on his aircrews, the other on his job, a commander calls for help.

Support your local Commander

Commanders of flying units occasionally find themselves under fire for the actions of those under their command. Most of them succeed in correcting whatever discrepancies lead to such actions, while others aren't so fortunate. This is how one tormented commander addressed his men when the going got really tough.

* * *

"I'm not going to bore you men with a lot of statistics or slogans on safety. Neither am I going over for the umpteenth time what an aircraft crash usually means to the crew aboard it. What I have to say concerns only two persons — you and me.

"For years, commanders have tried to educate, entice and, yes, even coerce their crews to follow rules and regulations. Some of the methods worked, some didn't. It's difficult, sometimes, to tell just which works best.

"The way things are going in this squadron, I just don't have time to fool around with any of the unproven devices. I need something now! Something that will get me off the hot seat and keep me in the squadron commander's seat. Something that will keep you from getting . . . well, you know what I mean.

"I've tried everything else I can think of and none of them worked. So, I've decided to appeal directly to you guys with the 'What's good for me' approach. Perhaps we can help each other. Frankly, I'm not quite ready for

Support Your Local Commander —continued

another PCS assignment just yet; I just got my wife and kids moved in last week. And I still haven't given up on another promotion, no matter what some of you out there might think. Most of you probably hope to retire some day, too, and with a rank higher than you're likely to get the way things are going around here. I know that, together, we can keep the big boys off our backs and keep each other out of trouble. I sure hope so, because my back already feels like a C-5 parking ramp.

"You men all have good attitudes — I can see that — not the college boy, rah, rah, variety. I mean you're sincere and well meaning in your jobs — well, most of you, anyhow. Would you please keep it down on the back row!

"But let's skip the philosophical analysis since it's old hat, anyhow, and just consider what kind of bonehead tricks are likely to get you in trouble. We both know we've had our share of boneheads in the cockpit. So listen. If one of the following examples fits with your personality, then you'd better change your personality for both of our sakes.

* * *

"Say you're flying your jet transport on a clear, crisp day. Plenty of visibility, lots of power, and two sets of 20-20 eyeballs in the cockpit. Traffic is practically non-existent but you're on an IFR clearance and Approach Control directs you to contact GCA.

"In between radio calls, you decide to alter course slightly and fly over your house to see whether the car is home. You're not really checking up on your wife, but if your car isn't there, that means she can't meet you at the squadron and you'll need to arrange other transportation. Nothing new in this, right. You've done it before and it works fine.

"But you can't see as well as you would like and decide to descend from your assigned 2,000 feet for a better look — slowly, of course, so your co-pilot and navigator won't notice you're fudging. A couple of 360's around the old homestead and, sure enough, there's your car. In fact, there's your wife and one of the kids out waving frantically, hoping its Daddy up there. To let them know that it is, indeed, Daddy, you flash your leading edge lights proudly as you circle overhead at the wrong altitude and in the wrong airspace.

"I was hoping you wouldn't do that. Not just because a Cessna passed 300 feet behind your plane just as you spotted your car. So far, that's the only good thing that's happened to you yet — the Cessna missed you. But that lieutenant colonel from Standardization living a block away didn't. He has eyes like a hawk, is not a very friendly type, and is bucking for full colonel like an unbroken mustang. He sharpens his teeth on captains, shines his shoes on the behinds of majors and — I won't even mention what he does to lieutenants. To top it off, he would love to be commander of a squadron — my squadron. And you're helping him with your flying act!

"Not that any of you sterling characters would think of pulling a stunt like this rock-head with the flashing lights at the wrong altitude. You'd most likely get a phone patch direct to your house! That's the problem, of course. That old Devil called temptation doesn't require premeditation — unless you've planned in advance the quickest way to cut your commander's throat.

* * *

"Here's another one. You've been to SEA and returned to the world of paperwork and regulations. While in SEA you needled your helicopter through ground fire like you'd never seen outside of a squirrel hunt; you've stretched regulations and airframes alike to pick up downed pilots. You had to autorotate your helicopter into rice paddies that would stop a bulldozer. Your reward was a tremendous feeling of self-accomplishment, a DFC, several Air Medals and a great many 'Attaboys' from fellow pilots. So now you're back stateside and things are awfully dull, particularly on today's training flight. But there's one thing you've wanted to check on ever since you returned from SEA. About a quarter of a mile from Charlie's house is a lake, rumored to be a haven for ducks. Are you a duck hunter? Does a Mallard have a quack? So why not take a look. The 'Attaboys' have all worn out, your

medals are for special occasions only, and you really need to do something different.

"So here you go, just a few miles outside your local training area but not far enough for anyone to really notice unless they looked mighty hard. Approaching the lake, you and your student begin your fighter pilot squint toward the water. You're at 500 feet and really moving out. The student spots them first. Lowering collective, you descend and within a few minutes there they are — by the hundreds — directly below. Not wishing to overdo a good thing, you mentally draw a map, pull in collective, and turn left toward home plate.

"Actually, you probably should have turned right; but that might not have helped, either, because ducks in flight are as unpredictable as a jealous wife on Saturday night. You bump back toward the base with your rotor three feet out of track, a cracked window and tell-tale duck corpses splattered all over your aerospace vehicle. The marsh mud, sucked up by your rotor as you skimmed across the ooze, is going to be hard to explain, too; and you wonder how to keep your flight mechanic's mouth shut. Should you just go ahead and lie like Hell about what you were doing and take a chance on someone squealing, or should you tell the truth and run the risk of an FEB. You think you can trust your student pilot to clam up, but you're not sure of that either the way everyone has been talking lately about something called integrity. Think you're in trouble? So am I.

* * *

"You're flying along happily in your twin engine job. You have two passengers, one a WAF, and you'll never have a better looking broad for a passenger if you live to be a hundred, which isn't likely the way you've been carrying on as a bachelor.

"You haven't made much of an inroad with her, though, and the flight is about over. She's a lieutenant and has taken a few flying lessons. You think of the old hymn 'Yield Not to Temptation' but letting her sit in the co-pilot's seat for landing isn't sinful, you rationalize. And the co-pilot isn't about to squeal on you because you've got enough on him to put his wife on permanent alimony. The same goes for the flight engineer who isn't too keen on rules, anyway.

"You still don't feel quite right about it, but your qualms all but disappear as the blonde beauty stretches and steps awkwardly into the co-pilot's seat, throwing you a knowing smile in the process. You touch down smoothly and turn off the runway. Before you can say 'Supervisor of Flying,' your 'real' copilot is back in his rightful position and your newly won friend stands between the seat smiling with one hand touching your shoulder.

"Think you're excited now! Just wait until you find out the other passenger was a headquarters weenie with close ties to the blond bombburst. Think you can explain that away? Then what are you going to say to the maintenance officer who was waiting in his little blue truck to cross the runway? Even our most rebellious copilots don't have blonde hair that long. You say blondie lost her lipstick in the cockpit and came up to look for it while you were on final, and couldn't get out again before landing? So you made her trade places with the copilot!? Buddy, that blonde temptation was my posterior you were taking chances with!

* * *

"Perhaps you feel that these examples are just wild exaggerations to make a point. Nope. Incidents almost identical to these, some of them fatal, have occurred in the recent past. And for every one reported, there probably are many more unreported. Where does that leave me — er, us. Under suspicion, that's where. Because the folks in the head shed have been down the road themselves and know what it means to have cockpit temptations. If you're even thinking of pulling something, there's a good chance that they've seen the same thing happen before.

"So think about how to avoid such pitfalls. Really, yielding to temptation sometimes seems like a swell way to overcome boredom, but doing so can cause your own or someone else's injury, serious trouble in the form of a FEB, a bill for damages, possible involuntary release from service, embarrassment for your family, and damage to a vital aircraft.

"Oh, yes, there's something else. The rest of the guys are going to be hounded and made miserable because of you. So if you won't think of yourselves, think of others — and particularly me.

"I'll do my best to make this a squadron you'll enjoy and can be proud of, believe me. How about you giving me a break. Like I said, I like being commander!"

A vital principle that actuates total self-commitment to safe air operations.

Emphasis on Discipline

by Capt A. R. Barbin, Associate Editor

Discipline means many things to many people. To some it conveys obedience, restraint, or punishment. To others, discipline conjures self-control, order, or conformity. These characteristics weave, mold, and strengthen mental faculties and character so as to attain some coveted objective. To aircrews, the objective is safe and efficient operation of the aircraft. Discipline — air discipline — is the common denominator that assures attainment of this objective.

The term air discipline has appeared with increased frequency in aviation safety journals and periodicals, including this one. Operational commanders have reaffirmed the importance of instilling discipline in the airlift mission. This concept is receiving a great deal of emphasis, but what is air discipline? What does it consist of? How is it developed and sustained?

What is it?

To professional aircrews, air discipline is a state of mind which enforces self-control upon attention to systematic accomplishment of cockpit responsibilities. Air discipline is an intangible commodity. You can't see it, touch it, or hear it. There is no black box that manufactures it, or cockpit gauge that measures it. Yet, it is present in varying degrees in all cockpits. Unfortunately, less in some than others. Discipline, unlike hydraulic fluid, fuel, or oil, cannot be topped off with a known quantity before every flight. Its level is maintained by conditioning oneself to the priorities of the cockpit and guarding against overconfidence and complacency. The majority of air disasters during recent years can be traced to either, or both, of these underminers of air discipline.

What it consists of

Discipline consists of demonstrating will power or resolve by adhering to a desired or prescribed pattern of behavior. In flying, this pattern of behavior is an unalterable commitment to follow the rules — all the time. It's a firm belief and conviction that the only way to a safe, efficient air operation, is to apply 100 percent of oneself to the job. It's based upon avoiding complacent attitudes and overconfidence. Discipline means consistently choosing to do the job as it was designed to be done.

Developing Discipline

Developing sound, effective cockpit discipline involves consistent adherence to established operational procedure. Professionals in all occupations condition themselves to perform consistently well

by developing good habit patterns. Over a period of time, these patterns of behavior become second nature and an integral part of the occupational routine.

Pilots are certainly no exception. Air Force pilots began developing safe cockpit habit patterns during undergraduate pilot training. Here, the unyielding UPT instructor planted the seed from which this habit pattern sapling could grow. With initiative, guidance, and experience, the sapling grew into a tree of disciplined behavioral responses we call habit patterns. But, a few allowed the sapling or tree to wither and suffered the consequences. The rest sustained their habit patterns through their insistence on flying by the book.

Altimeter settings, checklists, performance data, radar vectors, crew briefings, MEAs, aircraft procedures, are checked and rechecked. Nothing is overlooked or omitted. They won't allow it.

Attitude is a vital ingredient in the developing of disciplined habit patterns. An attitude is a persistent disposition to act either positively or negatively. Without a positive mental posture toward cockpit responsibilities, disciplined habit pattern certainly cannot evolve and safety of flight is seriously compromised. A proper attitude is one which stresses importance to every cockpit function — no matter how insignificant it may seem. This attitude insists upon cross-checking radar vectors, sector altitudes, terrain, aircraft position, and MEA's. It ensures meticulous completion of checklists and briefings. It demands scrupulous attention and adherence to Dash One procedures, major command operational policies, and other flight directives. And finally, it sustains the discipline necessary for safe, efficient mission accomplishment.

Sustaining Discipline

A champion football team maintains its enviable position throughout the season by sustained extra effort on the part of each team member. Practice sessions and strategy hone the defensive unit into an unyielding barrier and shapes the offensive unit into a phalanx of on-rushing power. The combination of extra effort and discipline bears victorious fruit each Sunday.

The difference between a football team and an aircrew team is in the application of management. The coaching staff scrutinizes the success of every gridiron tactic and evaluates the performance of every player. If there is an ineffective play or substandard player, then it or he is withdrawn from the game.

When the gear retracts into the well and another MAC crew heads east or westbound, the crew is on its own — perhaps for a few days or for many. There's no coach or wing commander calling the plays or ensuring that the mission is safely flown by the book. This responsibility and trust falls upon the aircraft commander, but each crew member has a responsibility to assist with uncompromising thoroughness.

Beware of short cuts, laxity, and complacency — the barometers of poor discipline. The temptation to fudge on weight and balance forms, to accept clearance to 370 when the charts indicate a performance ceiling of 34,600, to withhold an aircraft discrepancy until well on the way to a desirable crew stop, sacrificing crew rest to see the sights, neglecting terrain and aircraft position because you're under radar vectors, to close up the nav shop on commencing descent, are just a few.

Fatigue, repetition, and monotony, brought on by long hours and days of globetrotting, can, if allowed, impair attentiveness, attitudes, and discipline. Checklist line items and responses become a meaningless series of slurred utterances. Little things are forgotten or overlooked; for example, altimeter settings, transition altitudes, minimum enroute altitudes, and descent checklists.

Sustaining air discipline out in the system or around the flag pole requires a total commitment to the rules — no short cuts, no haphazard, minimum acceptable performance, no "close enough for government work" attitudes, no complacency.

Without Air Discipline

The relationship of man and aircraft can be compared to a circle. A circle of discipline. Part of the circle is the aircraft; the other is the crew. Aircraft are designed and structured to conform to the established disciplines of mathematics, physics, and aerodynamics. Yet, regardless how closely an aircraft is disciplined during design and fabrication, a careless moment of crew indiscipline may reduce it to a smoldering mass of debris.

You, the pilot, navigator, engineer, or loadmaster complete the circle of discipline. Crew actions produce predictable aircraft reactions. If these actions are disciplined, the circle remains intact and safety of flight is virtually guaranteed. If not, the circle is broken and safety of flight is compromised.

C.R. TERROR'S CH

A new year is here. Each January we set as our goal accident-free flying, aware that only by attaining this goal can our mission be totally successful, and our well-being assured.

But success must be bought. For MAC crews, this means each man must dedicate himself to certain principles — principles which will assure the desired flying safety level.

So, as this year begins, we challenge each of you to join us in making the following resolutions and sticking by them throughout 1974. Some apply to all crew members, others only to pilots. But they're all important to each of us.

I DO HEREBY RESOLVE:

☆ To cross-check glidepath data until over the threshold.

☆ To fly each instrument approach as if the weather were at minimums.

☆ To use good oxygen discipline.

☆ To give wide berth to thunderstorms.

☆ To execute a go-around when in doubt of a safe landing.

☆ To check all MEA/MOCA's and never operate below them except for takeoff, landing, or when otherwise authorized and it is safe to do so.

☆ To use all available nav-aids on each departure and approach.

HALLENGE FOR 1974

☆ To examine the takeoff and landing data closely.

☆ To stay current on the regulations and manuals and to keep my publications up-to-date.

☆ To use crew rest for crew rest, not for fatiguing activities which could affect my upcoming duties.

☆ To conduct thorough crew briefings.

☆ To taxi slowly and assure wingtip clearance at all times.

☆ To know and follow all the rules as well as I can every time I fly.

☆ To check and double check all my actions and always keep an alternative in mind.

☆ To treat passengers with the utmost consideration.

☆ To conduct myself in a manner which will assure my being here to make resolutions for next year.

Sometimes strange events will make the point. One crew was given a second chance following a...

Quick Stop at 350

by Maj Louis P. Gonzalez, AFIT,
University of Colorado,
Boulder, Colorado

Pilot, nav."

"Go ahead nav."

"Hey Dan, can you see any stars out there?"

"Hell it was clear just a second ago Jim, but I can't see anything now. Check the radar, will you, and see if you can pick up any buildups."

"Will do," Jim replied as he mumbled to himself about the rotten forecast from the base meteorologist, Uncle Weatherbee himself.

"Clear and dusty." He could recall the forecaster's exact words. Well that's another one he blew. When it rains it pours, Jim thought. First, that dumb doppler goes, then the ASN 24, and now this. This leg to Hickam stinks, especially without any celestial. Oh well, maybe good old Ocean Station November can give me a fix. With all the emphasis on drug abuse, though, I'd better call in a position," Jim chuckled to himself.

"Hey Dan, I can't pick up a thing out there but I — oh, my God — " Jim turned around in a flash to see the engineer frantically grasping at circuit breakers.

"Pilot we've just lost all four engines."

Dan felt as if his heart had stopped pumping. No instrument readings! Attitude indicators were tumbling, all lights on, and the altimeter still reading 35,000.

"Nav," called the engineer, "what's your altimeter?" Jim confirmed 35,000 feet.

The pilot broke in, "Engineer, we've lost some instruments but we're obviously still flying. Have you checked all the circuit breakers?"

"You won't believe this, sir, but everything on the circuit breaker panel is popped and I can't reset any of them. Why aren't we falling out of the sky?"

Dan looked in disbelief as he saw his copilot frozen to the yoke. "Scanner, get up here and get the copilot's oxygen mask on him. Nav, prepare an emergency message." Bob, the young copilot, finally came around with a few whiffs of oxygen and some shak-

ing by the scanner.

"Engineer, this is crazy!" declared the awed pilot. "We obviously have power and —" He stopped, aware that he tended to stammer during emergencies. He continued, slower this time, "How could we have any power with everything popped on that circuit breaker panel? How about pressurization?"

"Ground level."

Dan asked his shaken copilot to see if any of the radios would work. He was afraid they wouldn't but couldn't think of anything else. Bob confirmed his fears. "Everyone get on their LPU's and let's go through the ditching checklist."

Dan knew his train of thought was so disjointed that he was only grabbing at pieces. How do I find out what's going on? They never said a damn thing about anything like this when they R and C'd me. Are we flying, or what? In the same instant his altimeter dropped to zero. "Jim, what's your altimeter now?"

"Zero feet and God forgive us all," the wide-eyed navigator wailed.

Everyone just looked at each other. Dan grasped at thoughts as a man grasping for a hold in quicksand. "Nav, open up your sextant port."

Jim did so, not knowing why. "No sound, no whistle, no suction, pilot. What's going on?"

"Crew, this is the AC. I don't have any idea what's happening, nor do I really have any idea what to do. Are there any suggestions?" No one ventured a word. "Okay, I'm going to try to open my window. It will at least tell us if we're at altitude, flying, dead or whatever." It opened too easily as all watched, unbelievingly. It was pitch black and motionless outside. "Load, open up the crew entrance door."

"Not me, sir," the young loadmaster hedged.

"I don't blame you. I'm getting out of the seat. I'll open it." In a few minutes, Dan approached the door; his hand shook. He grabbed the handle and was about to open the door — then he heard it, a distinct knock. Sgt Dean, the loadmaster, also heard it and drew back from the door. Dan lifted the door and was dazed by a bright, fluorescent kind of lighting.

"Welcome, Capt Carr." A clear and authoritative voice greeted Dan. The pilot lowered the steps slowly and, with his crew close behind, descended down the crew ladder. At first they searched for the voice. Finally, they saw a figure appear from behind the tail of an old Flying Clipper.

"Don't fear, gentlemen; let me introduce myself. I am Sir Archibald Campbell. We have waited a long time for your Starlifter in our museum." His words hit like a bolt of lightning. The crew looked up and saw their bird mounted like a model airplane among a myriad of assorted aircraft. Sir Archibald, a tall, white-haired man with twinkling eyes, relished his role right down to the tweed jacket and walking stick.

"Gentlemen, as you can plainly see, we have one of each type of aircraft which has ever gone down in our Pacific area on display. It does seem as though our Atlantic Section receives a bit more attention — all those lost craft off Bermuda, you know. But you will find, gentlemen, that our displays are equally as impressive. There is so much to see and learn right here. Why, there is history all around you." Sir Archibald beamed proudly as he pointed his cane to an airplane which none of the crew could recognize. "Do you recognize it? That little beauty belonged to none other than Miss Amelia Earhart. She attempted her solo voyage around the world in it back in '37. And that China Clipper . . . " Sir Archibald was about to continue when TSgt Collins grabbed the old man by the collar.

"Listen, sir, whoever you are, what are you . . ?" But before he could continue, Sir Archibald simply disappeared and the engineer was left holding nothing but a memory. It was a scene right out of the "Twilight Zone." And just as suddenly as he had disappeared, the curator reappeared, this time under the pontoon of the old Clipper Ship he had been describing before the interruption.

"Excuse me, Sir Archibald," Dan said cautiously, not knowing exactly how to approach his host. "I apologize for Sgt Collins' actions, but you have placed us in an uncomfortable position. As the aircraft commander I — that is we — would appreciate some answers.

"But, of course, Captain." The old man smiled mischieviously and before the crew realized it, they were in an exquisite briefing room, seated in what must have been the plushest chairs. "Now you may continue with your questions, Capt Carr."

"Okay; first, and of most concern, Sir Archibald, is this Heaven, Hell, a bad dream, or are we . . . dead?"

"Well, gentlemen, to answer your commander's first inquiry is not all that simple. And what is

life, in any event, but perhaps one entry in the memory bank of some gigantic computer to be erased at will by He who key punches our lives. You see, each of these aircraft and those who brought them to this museum are not here by my design. No, they were brought here, most likely, by the Chief Programmer who designed what you call pilot or crew error."

"But what errors did we commit? Hell, we didn't do a damned thing wrong," Dan blurted, becoming ired with the old man's philosophy.

"Gentlemen," Sir Archibald cut in brusquely, "an accident never just happens. It is usually a cumulative process and not always attributable to just one individual on a crew. For instance, Sergeant Dean, about that Form F you prepared for your mission. The weight and CG you computed . . . "

"But I was rushed. The load didn't get to the aircraft on time, and fleet got there late. I usually recheck all the figures."

"Enough, enough." The young loadmaster was silenced and the detesting eyes of the crew fell upon him. "But, gentlemen, don't place all the blame on Sgt Dean, for the aircraft did get off and was actually in limits although the figures you had were incorrect. Didn't any of you notice the longer takeoff roll and extra trim and power that was necessary? How about you engineers? Did you bother to mention to Capt Carr what you found in the preflight, Sgt Collins? Suppose those nicks you found on the blades of the number four became too severe and cracked in flight. And don't feel left out, Sgt Gomez; how about those pressure door locks you are supposed to check?"

"Yeah, but that tenth pallet made it pretty awkward to get at to check all of those locks," Sgt Gomez replied defensively.

"And Mister Navigator." Jim cringed, realizing that he was next. "Do you have any idea how far off course you were? Remember that deviation check you were supposed to get as soon as practicable after initial level off. You were waiting to get it at your first celestial fix. Well my dear fellow, an extra minute to check your compasses would have shown you that both systems were in error by five degrees. A good centerline check would have given you an indication that something was wrong, particularly when your BDHI's differed. Also, I hardly believe you could have made it to Honolulu at an altitude of 25,000 feet as you indicated on your flight plan record. But a good computation of TAS and winds would have shown you could make it at FL 290. I won't even bother to mention your error on the range control chart, since no one else caught it.

"The old saying of youth being wasted on the young certainly applies to your boyish copilot. Correct, Mr. French? Did you manage to get any sleep last night? Don't be shy lieutenant, speak up."

"No sir," the once cocky right seater replied.

"That sweet young waitress in the sky just got in from her trip and couldn't live without a night of her dashing young man. And that beautiful tan you have wasn't obtained lolling in the sun studying your Dash One. No need for that though, you're still some six months away from the AC program."

How could he know all that, wondered the abashed copilot, not daring to look into the old man's twinkling eyes.

"And now, for your fearless leader, Captain Carr." But before he could continue, Dan was on the defensive.

"How could I know about all those things?"

"There is much to be said for the burden of command, Captain Carr. What do you think makes a good aircraft commander? Certainly you have average knowledge of the aircraft and systems and you don't let anybody, not even the Command Post, push your crew around. You are a real inspiration for the younger pilots — with your double set of standards. You've always been mission oriented, especially when it meant getting a mission in-country. Could that extra money during the Vietnam conflict have been a factor? Of course, you've turned down a few good aircraft after that first shuttle. I guess the flying fraternity will always have your type. But back to your question. Obviously, you can't know each specific detail about everyone's duties, but you have one job out there and that's to move people and cargo safely.

When you're the boss you should know as much as you can about your people, what they are doing, and what they are supposed to be doing. Literally, it's the old CYA routine.

"Another point, my friend, that paunch about your middle not only looks terrible but is probably as much a hazard as the other things I've noted. How would you like to be a passenger on a ship where your no-knowledged, fatigued copilot had to handle the bird because the overweight fellow in the left seat had a heart attack? Couldn't happen to you, heh, Captain? You just ran your annual aerobics trek in the fantastic time of 16 minutes. Thought you were going to have a stroke then. I'd hate to be in a survival situation with you and have that albatross about my neck. You see, my fearless invaders of the sky, I could go on and on, but just as the crews of those aircraft in our museum met their fate in accidents . . . "

"That's just it, Sir Archibald," Dan cut in. "We didn't have any accident. Admittedly, we were accident prone, but we didn't actually get into a fatal accident."

The old man looked a little quizzical and scratched his head. "Will you excuse me, gentlemen? I will have to confer with the Board of Directors on this one." With this, he was gone. In what seemed like an eternity, he reappeared. All listened attentively, sensing that their fate depended on the words of this old man.

"I have presented your case, my friends, and leniency has been awarded. There is no need for comments or sermons. I can only hope you might profit from your exercise in error."

A moment later the crew members were in their seats with headsets on. Honolulu Center was calling; "MAC 13601, radar contact five zero miles northeast of Agate. Squawk 2200; cleared flight plan route; descend at pilot's discretion to cross Koko Head at one zero thousand; Honolulu altimeter, 29.94."

Dan acknowledged.

"Crew, this is the pilot, check in." After all checked in Dan continued.

"I don't know if I've just had a sinker and conked out, but I want you to tell me if we've been involved in something weird."

"We were all there," Jim confirmed, "but can we ever tell anyone? No one would believe us."

"Okay, crew, I don't know what I'm going to do or if we should tell anyone, but as soon as we hit the ground, I want all of you to start writing every detail you can recall. Sergeant Collins, I want you and Gomez to give this bird the best damn looking over ever."

* * *

"Hey Captain, Gomez and I looked 601 over from head to foot and we couldn't find a thing mechanically wrong with her."

"I don't like the way you emphasized mechanically, Collins. Just what did you find?"

"It's not what we found, Sir, it's what we didn't find."

"Didn't find?"

"Yes Sir. We looked and looked and everything checked out. Gomez and I had just finished our inspection and were about to bug out on the crew bus when the bus driver asked us how come there wasn't any identification on the airplane. Hell Captain, there weren't any tail numbers or anything else to identify the bird. Even the fuel data plate was gone."

* * *

"Ladies and Gentlemen, I am so sorry to disappoint you, but the addition of the C-141 to our museum has been temporarily delayed due to a technicality." The white haired old man was speaking. "We do hope to have a replacement for you in the near future, possibly a C-5A. It will be displayed in the area where you now see the still photos, tail numbers, and other identification from an actual Starlifter."

AEROTITIS

Dear Doc

It's been almost three years since I had physiological training. I can't remember from the last chamber flight the details on clearing an ear block. I've had a few of 'em hang on this winter. Could you prescribe something for my problem? When I get that headache, I don't hear so well!

E. Block, Capt

Dear Capt Block

Let me begin by explaining a term. OTITIS means irritation or inflammation of the middle ear. Add AERO and you get AEROTITIS — irritation of the ear due to flight. This disease sounds very much like your problem. It affects many new fliers, and those that ignore basic health rules of flight.

In our business of flying, we are constantly exposed to changing air pressure on every ascent and descent. We sense these changes in our ears, which constantly adjust to changing pressures.

The ear canal starts with the outer ear and ends at the ear drum. On the other side of the ear drum is the middle ear cavity which has an opening leading to the eustachian tube. This tube opens at the other end into the back of the nose. This throat end of the eustachian tube is normally closed. It is only open when we swallow, due to the throat muscles pulling it open. During the moment of swallowing, air can travel in and out of the middle ear cavity.

On ascent, the ears take care of themselves. During climb out to cruise altitude, the cabin pressure decreases, leaving too much air in the middle ear. This air escapes automatically through the eustachian tube. You have experienced the "clicking" sound on climb out. This is the air escaping.

During descent the eustachian tube must be opened by you to equalize the pressure on the ear drum.

If the tube is blocked on the descent, the pressure cannot equalize. You will not notice the normal popping sensation, your ears may feel stuffy, or the engines may seem quieter. If this discomfort persists for more than two hours after landing, consult the flight surgeon. To clear your ears on descent, follow these simple instructions.

Yawning, gentle blowing of the nose, swallowing, thrusting the lower jaw forward, or use of an inhaler, will frequently open the eustachian tube. If these measures do not work, pinch your nostrils, close your mouth, and make an effort to blow your nose. The most important thing to remember is start clearing your ears when descent begins, and continue clearing throughout descent. Keep repeating the procedure that gives you relief.

Swelling in the back of the nose and throat can partially or completely block the eustachian tube. Such swelling can be caused by a head cold, sinus infection, hay fever, irritation following swimming in chlorinated pools, excessive smoking, dust ladened air, or irritating fumes. If you have any symptoms of a head cold or stuffy nose, check your ability to let air in and out of your eustachian tubes **before** you fly. By taking a few sips of water and swallowing vigorously, you should hear clicking noises in both ears. If you do NOT hear these noises on swallowing, consult the flight surgeon.

If you have passengers on board, remember they should be advised prior to descent so they can clear their ears on the way down. This is especially important for children. If a passenger complains of blocked ears, instruct him to yawn, swallow, or thrust the jaw forward. Have him gently blow his nose and immediately swallow. Have him pinch his nose, close his mouth, and make an effort to blow his nose. If the passenger complains of ear discomfort on deplaning, advise him to consult a physician should the discomfort persist for more than two hours. A little professional finesse in the wheel house and at the cabin pressurization panel is a big help also.

I hope this has refreshed your memory and will help you clear your blocked ears. Remember, when you've got passengers in the back, you have a responsibility to them, too. Anyway, now you know what AEROTITIS is and how to prevent it. See you around.

DOC

(Adapted from an article by Dr. George Kidera, V. P. Medical Services, United Airlines, San Francisco International Airport)

Global Notes

25 Years accident-free flying

The 89th MAW, Andrews AFB, MD, completed 25 years of accident-free flying on 1 October 1973. To the best of our knowledge, this is the first Air Force organization to achieve this record. The unit logged more than 475,000 flying hours in attaining this milestone.

During the past year, the wing received the USAF Flight Safety Plaque, awarded to Air Force units below MAJCOM level for meritorious achievement in flying safety, and the MAC Flight Safety Achievement Award, given to recognize active wings with the most effective flight safety programs.

This exceptional unit began its flying activities on 1 October 1948 at Washington National Airport, as the 1254th Air Transport Squadron. In later years, the squadron grew into the 89th MAW as airlift commitments increased.

It provides world-wide air transportation for top government officials including the President, the Vice-President, cabinet members, and other dignitaries of the United States and other countries. The 89th maintains six different types of aircraft, including the President's VC-137, "The Spirit of '76."

Congratulations!

A flight examiner substitution creates problems for the Master Manipulator's instrument check and vacation plans.

C.R. TERROR

Gotta get some Z's, m'dear. Your fearless flier has an o'dark hundred get up for my annual instrument check. Just a mere formality. Major S. Claus administered this flight evaluation to your Able Aeronaut last year and nearly tripped over his beard. Should be all finished up before noon. Then we'll slip into my go-fast machine and head north toward the high Sierras for two glorious weeks sculpturing virgin snows by day. Liquors, flambe, and frolic by the fireplace by night. Matter of fact, Jean Claude Killy and your own Suave Skier graced many an Alpine slope. Taught him everything he knows.

"Have all your things packed my little chickadee, C and R will be by 'bout high noon."

At 0400, the Rotund One wearily stumbled into the flight operations building.

"Major Terror, there's been a slight change in the crew setup," advised the duty officer.

"Whadd'ya mean by a slight change," roared the Weary Wingman.

"Well, Major Claus called in DNIF last night and the schedulers did some mad scrambling to find a flight examiner to administer flight evals to you and Capt Faint. They rounded up some FE, TDY here from MAC Standardization."

"What's his name?" challenged C. R.

"Major MacZaminer," replied the duty officer with authority. "In fact, he's waiting for you in the briefing room — that's the second door on the left."

"Jeeez, you gotta be kiddin — theee Major MacZaminer," blurted the Fat One.

"Yes, Major Terror; theee Major MacZaminer!"

This "slight" change burst C. R.'s bubble. Perspiration formed a cataract on his shiny dome and his heart throbbed a mighty beat. Increased adrenalin flow mustered every bit of mental energy as C. R. tried to recall

long forgotten instrument and emergency procedures.

Short of the briefing room, the Portly Pilot paused to insert a gold ringed Egyptian Oval into his ornately carved ebony cigarette holder. A flash of flame from a 24 karat gold Thai tiger lighter ignited the weed. A billow of sweet blue smoke temporarily renewed C. R.'s savoir faire.

"Good morning, I'm Major MacZaminer and you must be Major C. R. Terror."

"Affirmative my good man. Your Able Ace of Avionics and Aerospace is primed to, once again, verify my well renown, cunning, cockpit felicity. One each, swept wing, aeronautical gondola awaits the Master Tamer of T-tails. So, I'll get the weather brief and the local nav kit . . . "

MacZaminer calmly interrupted. "Major Terror, we've plenty of time before scheduled takeoff, and I wish to discuss the mission profile and review appropriate instrument and emergency procedures beforehand. But first, let's get a cup of coffee."

"A smashing suggestion," C. R. said approvingly. The Aviator with Avoirdupois slowly sipped the macabre command post brew while frantically searching his devious mind for ways to delay the stranger's sure scrutiny. C. R. finally unknotted his tongue.

"I was whistling down ILS final at Elmendorf awhile back, number four shutdown, ceiling right at 200 feet, blowing snow, crosswinds right on limits, when my attitude indicator decided to do a loop. Continued on, using needle, ball, and airspeed, and greased 'er on. Said many a time that when the going gets rough it takes real pros, like ourselves for example, to press on and get the job done."

"Very interesting. But now, let's get started with the briefing Major Terror. To be a little less formal, what does the C. on your name tag stand for?"

Eager to please, C. R. replied, "The C. stands for Chance. It's an ancestral name dating back to seventeenth century aristocracy. Rarely use the name except for formal affairs every few years."

"Very well, Major Terror."

Major MacZaminer began the briefing. "The flight profile will consist of a Harmon Two departure to the depicted holding pattern at McKendree Intersection, followed by a point-to-point clearance to the TACAN/ILS approach to runway 17. After the ILS touch and go, you can expect numerous approaches to 17 and one or two circling approaches to runway 35. Emergencies will be simulated and I expect you to initiate and coordinate emergency procedures."

The Master Manipulator of Wires and Tires strained to quell his anxiety. Surely, this is a bad dream. Any moment now my quadrasonic, digital clock radio will shatter this frenzy of the mind, C. R. thought.

But MacZaminer's diabolic inquisition persisted.

"Major Terror, what are the lead point procedures for transition from a TACAN arc to a radial?"

"Center the CDI and aahh . . . turn aahh . . . The rule of thumb aahh . . . 30 degrees above 14,000 feet and 15 degrees of bank below."

"With a failed glide slope receiver, can an ILS approach be continued and if so, what are the minimums?"

"Aaah, well it's illegal to fail a glide slope. Never seen one fail yet."

C. R. was really scrambling now — an hour to go before takeoff. May as well be eternity. "When is this young, gee-whiz prodigy from the MAC puzzle palace going to cease with the harassment," muttered the Pudgy Pilot.

MacZaminer continued his relentless, thorough, probing of C. R.'s miniscule reservoir of facts and figures for the next hour.

C. R. withstood the intense fusillade of battering questions about like a novice skier on an olympic slalom course.

"Well Major Terror, this concludes the briefing and ground evaluation for the time being. Let's go fly," commanded MAC's finest.

The Able Aeronaut was, at the moment, quite unable. This ninety minute verbal broadside left the World's Greatest Aviator temporarily paralyzed, but C. R. quickly rebounded and rationalized. This guy knows what it's all about and where it counts — and that's in the cockpit arena. Hell, everyone

C.R. TERROR —continued

misses a few tricky, loaded questions sometimes.

* * *

"Gear up m'boy," directed the Fearless Flier. C. R. intercepted the outbound SID radial with great precision and all went smoothly during initial climbout to 6,000 feet. C. R., bravado renewed, was elated and confident. Approaching McKendree Intersection, the Intrepid Interpreter of Instruments prophesied, "I'll enter this aeronautical race track using only my BDHI — just like the old days. All these flight directors, HSI's, bank steering bars and such, just confuse the issue. I always say stick with the basics."

MacZaminer remained silent. Leaning forward to adjust his HSI, the expert examiner simultaneously actuated the number four fire warning test switch.

"Simulated fire, number four," voiced MacZaminer.

The Spring Loaded Steersman of Stringers and Stabilizers stretched his pudgy paw toward the tell-tale T-handle. Clutching it, C. R. started to pull number three. Suddenly, C. R. felt his wrist gripped in a vise of muscle.

"Is that number four?" questioned MacZaminer.

"Haven't got to number four yet; was jest feelin my way across the panel," defended the Dauntless Driver.

"Engine failure, aahh fire, ugh, explosion after takeoff in cruise checklist. Call the center, call the fire department, call the SOF. Get the gear and flaps down, jettison cargo, er fuel. We're headin' back to the barn," barked C. R.

The four engine MAC heavy arched its wings skyward as C. R. pulled a steady two-G turn toward base.

"Got the field in sight, cancel IFR. We're going in visual."

"Gear down," ordered C. R.

"I believe 245 knots is rather excessive for the landing gear," stated MacZaminer.

"Just checking to see if the copilots on the ball, always check m'copilots."

C. R. deployed full flight spoilers to slow the bird to gear speed. The big bird shot up 500 feet. "Whoa you aluminum overcast! Spoilers are mighty sensitive on this bird," blustered the Master Manipulator.

"Turnin' final, the Fastidious Flyer's got the runway made."

Something was wrong, the big bird descended at an alarming rate. Vertical velocity increased steadily; 1,500, 2,000, now, the vertical velocity indicated a steady 3,200 feet per minute.

C. R. furiously scanned cockpit indicators for the cause of his present plight, but the Lockheed Leviathan continued its perilous plunge.

"I have the aircraft," commanded MacZaminer. With sure swiftness, MacZaminer retracted the spoilers and gear, applied go-around power, and requested a radar pattern to an ILS final, full stop termination. On downwind, the Expert Examiner briefed the approach and configured the aircraft. The final approach and landing were an exercise of incredible precision as course and glide slope indicators were bisected by their cursors.

* * *

"Major Terror, your performance throughout this mission was entirely unsatisfactory. Your familiarity with instrument and emergency procedures is unquestionably substandard, and operation of the aircraft lacked any measure of precision. Most important, you failed to demonstrate awareness or responsibility toward safety of flight. A detailed report of this mission will be sent to your commander. I am recommending downgrade to copilot, unqualified, with intensive ground training, beginning immediately."

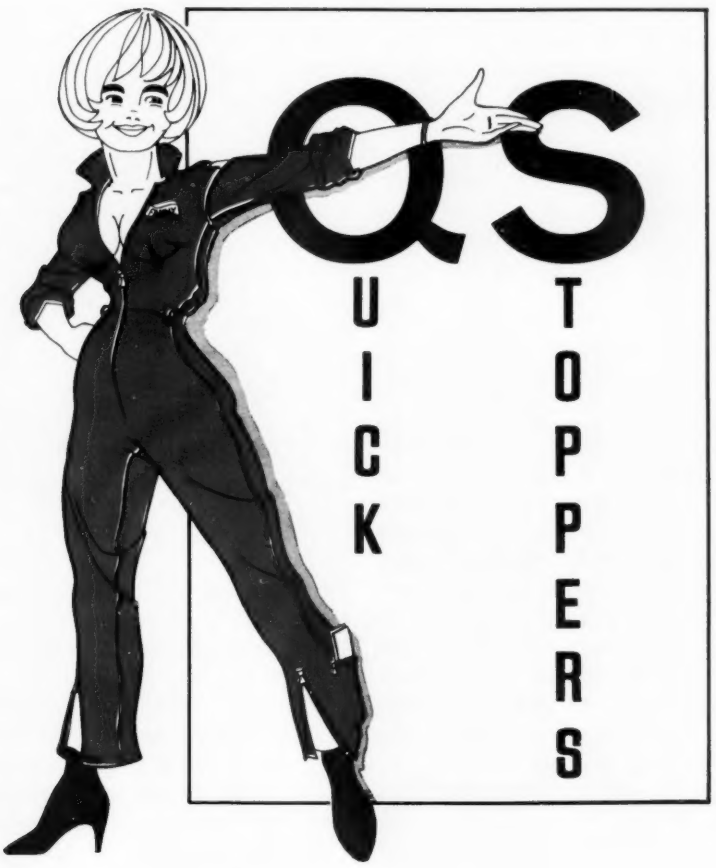
Rarely had C. R. suffered such a setback. He sat motionless and stunned.

"Lindbergh, Rickenbacker, and Armstrong certainly experienced an occasional bad day at the helm, and today, it was my turn," rationalized the Rotund One.

* * *

C. R.'s corpulent prehensile digit spun the telephone dial.

"Hello m'dear, some unexpected missions requiring the adroitness of your Agile Aviator are scheduled for the next few weeks. But, I'll be by as advertised, and we'll be off to Spruce Hill. Skiing in artificial snow is much more challenging than the real stuff anyway."



Pneumonia -- Still a Killer

A pilot just three years from retirement age entered the flight surgeon's office complaining of chest pains. He had a cough and a slight temperature and admitted flying for two or three weeks with a cold. The doctor could find nothing wrong but urged a hospital diagnosis. The flier decided he was okay and went out to fly a local.

Two days later he was admitted to the hospital with a temperature and further pains. His illness was diagnosed as pneumonia. His condition rapidly deteriorated and, in spite of efforts by the hospital staff, the pilot died 18 hours later.

One often finds it difficult to seek medical aid for seemingly minor ailments. If you have a cold, you shouldn't be flying to begin with. But whether you plan to fly or not, seek professional help and accept advice from those who know.

Will the Real Runway Please Stand Up?

The C-141 pilot was briefed that due to runway construction at an eastern base the runway width had been reduced from 300 to 178 feet and that the left edge of the usable runway was marked by a row of temporary lights.

The pilot broke out at 700 feet from a night ILS approach and was greeted by a dazzling display of lights. Approach zone lighting, runway identifier lights and **three** rows of runway lights highlighted this display.

He aligned the Starlifter on what he thought was the displaced centerline. By the time his landing lights illuminated the actual runway centerline, the Starlifter was touching down. It wiped out three runway lights and four main gear tires. The pilot had misinterpreted the temporary left edge lights as the displaced centerline lights and planted his bird right down on them.

Command Posts have since expanded briefings to crews operating into this particular base to preclude the recurrence of illusionary misinterpretation. But the possibility of illusions is often present at night, regardless of where you may be landing.

Qs —continued

Mis-DME-Nor

At 32 nm DME on a tacan approach, a pilot confirmed visually, and with radar, that he was actually only 12 miles from the station. He continued past the station to further check the DME. But the DME regained its accuracy after station passage.

After the flight, the tacan set was written up, but maintenance could not duplicate the malfunction. However, the tacan equipment aboard the aircraft was believed to have caused the error. A DME discrepancy had occurred at the same base once before during the month. That time there had been a two-mile error and the fault was in the tacan set.

While the likelihood of azimuth errors has been widely publicized, DME errors are not so common.

MAC crews are required to check their equipment prior to takeoff and crosscheck all available backup equipment during an approach. This is the best way to determine the accuracy of the black boxes. Remember, there's no warning system to alert you to an erroneous DME reading.

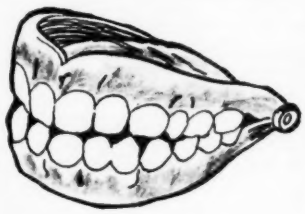
Interrupted Sequence

The twin engine jet was descending fast through 11,000 feet toward a normal VFR traffic pattern. Then, to save time, the pilot decided to fly a straight-in approach instead. He glanced at his airspeed indicator and mechanically lowered the landing gear. A loud "crunch" accompanied the immediate departure of the right main landing gear door which plummeted to earth.

Why had the gear door ripped off? The pilot had interrupted his normal pattern sequence by making a quick decision to change the approach. Hurrying his actions and not fully interpreting his airspeed indicator, he lowered the landing gear 80 knots above the maximum gear extension speed. He was actually 100 knots faster than he thought.

Acting before thinking is hazardous, especially when combined with an interruption of normal cockpit procedural sequences.

Worn Teeth



The mixture levers were moved from auto rich to auto-lean as the four-engine transport leveled off at 8,000 feet. Suddenly, the fuel flow on number three engine dropped to zero. The propeller was feathered and an uneventful three-engine landing made.

Maintenance personnel discovered the castellated nut that holds the mixture control lever had not been properly tightened. This nut had been tightened enough to allow cotter pin installation, but sufficient clearance remained for the teeth of the mixture arm to wear. This allowed the control arm to slip off near the idle cut-off position.

While the flight crews don't tear into the mechanical workings of the engine controls quadrant, anytime a lever of any kind requires unusual pressure to move, crews should write it up.

Missing Approach

As the MAC crew neared the initial approach fix at a Mid-Eastern base, the copilot called for approach clearance. The air traffic controller responded that he was unfamiliar with the approach requested. So he cleared the aircraft for a different approach. But the surprised crew did not have that particular approach in their DOD FLIP terminal books.

To avoid confusion, the pilot accepted radar vectors to a visual pattern. During descent, he heard civil aircraft being cleared for an NDB approach which recently had been deleted from the DOD plates.

On the ground the crew learned that the NDB approach had been deleted from USAF use because it did not comply with the terrain clearance criteria. Other approaches were available to the crew but on Jeppeson plates, not DOD charts. MACR 55-1 authorizes aircrews to use Jeppeson charts when there are no applicable DOD approaches, but this MAC crew did not have Jeppeson plates onboard.

The operating policy of the 21 AF, to which this crew was assigned, requires flight crews transiting the area to have Jeppeson approach plates on board.

Be sure you know which publications are required the next time you start out. They could help you come back down to earth.

Flameout

A T-39 was cruising at FL 370 and, after 40 minutes of flight, the right low pressure fuel light illuminated. The pilot placed the crossfeed tank selector switch in crossfeed and the light went out (indicating a tank mounted boost pump failure).

He slipped the aircraft to correct the fuel imbalance which resulted from the crossfeed operation. When the aircraft came to a wings-level attitude, one engine flamed out.

The reason for the flameout has not been determined, but tests are being run to see if air disruption to the engine during uncoordinated flight could have caused it.

Erroneous Entry

The navigator toyed with the idea of accepting the flight plan figures at face value, without checking their accuracy. Instead, he checked the time, distance, and fuel figures as usual. It was fortunate for his crew that he did.

The total estimated enroute time was 40 minutes short of the correct time. A zone time was erroneously listed as one minute instead of the actual five. A position coordinate was wrong because of a misprint.

Because these errors were all caught during flight planning, a serious problem was averted.

Other electronically transmitted flight plans were carefully checked and no errors were found. In this case the misprints had been a "one in a million" output.

This navigator prevented a possible emergency by checking flight plan figures; as boring as this requirement may seem, it's a double check expense well worth the effort.

the ANALYZER

"I WONDER WHY THE REST OF THE CREW HASN'T SHOWN UP YET."

after deadline . . .

SOF REPORTS -- Reports from the field provide some interesting examples of how the Supervisor of Flying is backing up MAC crews stateside and around the globe. The following are from official reports:

* After engine start at a stateside base, the SOF was following an aircraft onto the taxiway when he noticed a large trail of fresh hydraulic fluid on the right side of the taxiway. He passed this information to the crew who inspected the aircraft and found that number three hydraulic system pressure had dropped to zero. The entire under-wing area of the right fuselage was covered with hydraulic fluid from a leak in a line leading to the spoiler pack. Had the SOF not noticed the leak, the system likely would have failed. It is easy to see how important this find was.

* The SOF found 100 rounds of Class "C" ammunition on an aircraft scheduled for a training sortie. The explosives had been delivered along with the training pyrotechnics.

* An open access panel in a transport's right wing root area was spotted by the SOF as the plane prepared to take off. Possible structural damage was averted by this discovery.

* The fog on the ramp was so dense that taxiing on the yellow line was extremely difficult. The SOF notified the aircraft commander, and a transient alert vehicle led the aircraft to the runway, where the weather was above minimums.

* A vehicle waiting for a DV passenger to disembark was parked under the wing tip of the aircraft. The SOF directed the driver away from this hazardous position.

* A caravan of troop buses was passing very close to parked aircraft on an overseas base. The SOF directed the drivers to maintain more distance between their vehicles and the parked aircraft.

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Happy New Year

Make 1974 the safest one yet

--The MAC Safety Directorate